

Teaching at a Liberal Arts College

Michael Z. Spivey

University of Puget Sound

October 21, 2019

University of Puget Sound

University of Puget Sound

- ▶ Private, mostly residential college

University of Puget Sound

- ▶ Private, mostly residential college
- ▶ In Tacoma, Washington (about 35 miles south of Seattle)

University of Puget Sound

- ▶ Private, mostly residential college
- ▶ In Tacoma, Washington (about 35 miles south of Seattle)
- ▶ About 2600 students
 - ▶ Nearly all are undergraduates
 - ▶ We have a few graduate programs (education, occupational therapy, physical therapy)

Mathematics at Puget Sound

Mathematics at Puget Sound

- ▶ About 20-25 math graduates each year

Mathematics at Puget Sound

- ▶ About 20-25 math graduates each year
- ▶ Strong science program that helps support mathematics (around 30% of undergraduates are math or science majors)

Mathematics at Puget Sound

- ▶ About 20-25 math graduates each year
- ▶ Strong science program that helps support mathematics (around 30% of undergraduates are math or science majors)
- ▶ Currently a joint department with computer science, but we plan to split in the next couple of years

Mathematics at Puget Sound

- ▶ About 20-25 math graduates each year
- ▶ Strong science program that helps support mathematics (around 30% of undergraduates are math or science majors)
- ▶ Currently a joint department with computer science, but we plan to split in the next couple of years
- ▶ Active Putnam Exam and Mathematical Contest in Modeling groups

Graduation Requirements for Math Majors

Graduation Requirements for Math Majors

- ▶ Calculus sequence
- ▶ Linear algebra
- ▶ Introductory computer programming
- ▶ At least five upper-division math courses

Graduation Requirements for Math Majors

- ▶ Calculus sequence
- ▶ Linear algebra
- ▶ Introductory computer programming
- ▶ At least five upper-division math courses
- ▶ Two first-year seminars
- ▶ Approaches
 - ▶ Artistic
 - ▶ Humanistic
 - ▶ Natural Scientific
 - ▶ Social Scientific
- ▶ Proficiency in a foreign language
- ▶ Connections (upper-level, interdisciplinary course)
- ▶ Two upper-division courses outside the major
- ▶ KNOW (Knowledge, Identity, and Power)

Teaching Mathematics at Puget Sound

Teaching Mathematics at Puget Sound

- ▶ Six courses per year (three each semester)

Teaching Mathematics at Puget Sound

- ▶ Six courses per year (three each semester)

- ▶ Small classes
 - ▶ Mathematics of computer science: 14
 - ▶ Multivariate calculus: 9
 - ▶ Interactive fiction: 18

Teaching Mathematics at Puget Sound

- ▶ Courses I've taught in the past five years

Teaching Mathematics at Puget Sound

- ▶ Courses I've taught in the past five years
 - ▶ Calculus I and II (differential and integral calculus)
 - ▶ Multivariate calculus
 - ▶ Differential equations
 - ▶ Mathematics of computer science (discrete mathematics)
 - ▶ Real Analysis I and II
 - ▶ Optimization
 - ▶ Mathematical modeling
 - ▶ Special topics: binomial coefficients
 - ▶ Interactive fiction

Teaching Mathematics at Puget Sound

- ▶ Courses I've taught in the past five years
 - ▶ Calculus I and II (differential and integral calculus)
 - ▶ Multivariate calculus
 - ▶ Differential equations
 - ▶ Mathematics of computer science (discrete mathematics)
 - ▶ Real Analysis I and II
 - ▶ Optimization
 - ▶ Mathematical modeling
 - ▶ Special topics: binomial coefficients
 - ▶ Interactive fiction

- ▶ Other courses in the past: introductory statistics, combinatorics, probability theory

Teaching at a Liberal Arts College

Teaching at a Liberal Arts College

- ▶ More teaching/less research

Teaching at a Liberal Arts College

- ▶ More teaching/less research
- ▶ Small classes

Teaching at a Liberal Arts College

- ▶ More teaching/less research
- ▶ Small classes
- ▶ No graduate students (usually)

Teaching at a Liberal Arts College

- ▶ More teaching/less research
- ▶ Small classes
- ▶ No graduate students (usually)
- ▶ More flexibility with research specialization
 - ▶ My background is operations research, but I've done lots of work in combinatorics.
 - ▶ Our statistician's PhD is in differential geometry.

Teaching at a Liberal Arts College

- ▶ More teaching/less research
- ▶ Small classes
- ▶ No graduate students (usually)
- ▶ More flexibility with research specialization
 - ▶ My background is operations research, but I've done lots of work in combinatorics.
 - ▶ Our statistician's PhD is in differential geometry.
- ▶ More opportunities to pursue interdisciplinary interests

Teaching at a Liberal Arts College

- ▶ More teaching/less research
- ▶ Small classes
- ▶ No graduate students (usually)
- ▶ More flexibility with research specialization
 - ▶ My background is operations research, but I've done lots of work in combinatorics.
 - ▶ Our statistician's PhD is in differential geometry.
- ▶ More opportunities to pursue interdisciplinary interests
- ▶ Undergraduate research

Getting Hired at a Liberal Arts College

- ▶ Last two searches

Getting Hired at a Liberal Arts College

- ▶ Last two searches
 - ▶ Pure math (analysis): about 270 applicants
 - ▶ Applied math: about 50 applicants

Job Announcement from 2015-16

Candidates are expected to have a Ph.D. in mathematics or a closely related field by the time of appointment. Preference will be given to candidates who can teach courses in analysis and other areas of pure mathematics. **Candidates should also have an interest in teaching a wide variety of courses**, such as linear algebra, the calculus sequence, and **introductory statistics**.

The University of Puget Sound is a selective liberal arts college, and candidates should have a **commitment to undergraduate teaching and liberal arts education**. Preference will be given to candidates whose **research interests can incorporate or generate undergraduate research projects**.

Job Announcement from 2015-16

Please submit curriculum vitae (CV) when prompted to submit resume. Additional documents can be attached within the application. Applications submitted without these documents requested below will not be considered:

- ▶ Curriculum vitae
- ▶ Letter of Interest
- ▶ Teaching statement
- ▶ Research statement
- ▶ Three (3) Letters of Reference, at least one of which should be in regard to teaching. You will be prompted to enter the contact information for three (3) reference providers. The system will email these reference providers to request a letter on the next business day.
- ▶ Teaching evaluations (optional)

Letter of Interest¹

¹partly borrowed from Dagan Karp, “Applying to Liberal Arts Colleges”

Letter of Interest¹

- ▶ Address all requests and questions in the job announcement.

¹partly borrowed from Dagan Karp, “Applying to Liberal Arts Colleges”

Letter of Interest¹

- ▶ Address all requests and questions in the job announcement.
- ▶ Describe why you would be a good fit for the department and position.

¹partly borrowed from Dagan Karp, “Applying to Liberal Arts Colleges”

Letter of Interest¹

- ▶ Address all requests and questions in the job announcement.
- ▶ Describe why you would be a good fit for the department and position.
- ▶ Explain how you would strengthen the department.

¹partly borrowed from Dagan Karp, “Applying to Liberal Arts Colleges”

Letter of Interest¹

- ▶ Address all requests and questions in the job announcement.
- ▶ Describe why you would be a good fit for the department and position.
- ▶ Explain how you would strengthen the department.
- ▶ **Make clear that you understand liberal arts colleges.**

¹partly borrowed from Dagan Karp, “Applying to Liberal Arts Colleges”

Letter of Interest¹

- ▶ Address all requests and questions in the job announcement.
- ▶ Describe why you would be a good fit for the department and position.
- ▶ Explain how you would strengthen the department.
- ▶ **Make clear that you understand liberal arts colleges.**
 - ▶ For example, do not talk about the work you would do with graduate students.

¹partly borrowed from Dagan Karp, “Applying to Liberal Arts Colleges”

Letter of Interest¹

- ▶ Address all requests and questions in the job announcement.
- ▶ Describe why you would be a good fit for the department and position.
- ▶ Explain how you would strengthen the department.
- ▶ **Make clear that you understand liberal arts colleges.**
 - ▶ For example, do not talk about the work you would do with graduate students.
 - ▶ If you've attended or taught at a liberal arts college, indicate that.

¹partly borrowed from Dagan Karp, "Applying to Liberal Arts Colleges"

Letter of Interest¹

- ▶ Address all requests and questions in the job announcement.
- ▶ Describe why you would be a good fit for the department and position.
- ▶ Explain how you would strengthen the department.
- ▶ **Make clear that you understand liberal arts colleges.**
 - ▶ For example, do not talk about the work you would do with graduate students.
 - ▶ If you've attended or taught at a liberal arts college, indicate that.
- ▶ Mention any personal connections to the college.

¹partly borrowed from Dagan Karp, "Applying to Liberal Arts Colleges"

Letter of Interest¹

- ▶ Address all requests and questions in the job announcement.
- ▶ Describe why you would be a good fit for the department and position.
- ▶ Explain how you would strengthen the department.
- ▶ **Make clear that you understand liberal arts colleges.**
 - ▶ For example, do not talk about the work you would do with graduate students.
 - ▶ If you've attended or taught at a liberal arts college, indicate that.
- ▶ Mention any personal connections to the college.
- ▶ (For us) Mention any personal interests in living in the region where the college is located.

¹partly borrowed from Dagan Karp, "Applying to Liberal Arts Colleges"

Letter of Interest¹

- ▶ Address all requests and questions in the job announcement.
- ▶ Describe why you would be a good fit for the department and position.
- ▶ Explain how you would strengthen the department.
- ▶ **Make clear that you understand liberal arts colleges.**
 - ▶ For example, do not talk about the work you would do with graduate students.
 - ▶ If you've attended or taught at a liberal arts college, indicate that.
- ▶ Mention any personal connections to the college.
- ▶ (For us) Mention any personal interests in living in the region where the college is located.
- ▶ Make your interest in teaching clear.

¹partly borrowed from Dagan Karp, "Applying to Liberal Arts Colleges"

Teaching Statement²

- ▶ Teaching philosophy
- ▶ Teaching awards (if any)
- ▶ Teaching experience (all classes ever taught)
- ▶ Teaching interests
- ▶ Other teaching related material (Putnam, MCM, etc.)

²partly borrowed from Dagan Karp, “Applying to Liberal Arts Colleges”

Teaching Statement²

- ▶ Teaching philosophy
- ▶ Teaching awards (if any)
- ▶ Teaching experience (all classes ever taught)
- ▶ Teaching interests
- ▶ Other teaching related material (Putnam, MCM, etc.)
- ▶ **Have you thought carefully about teaching?**

²partly borrowed from Dagan Karp, “Applying to Liberal Arts Colleges”

Other Parts of Your Application³

- ▶ Research Statement
 - ▶ Should be understandable enough that non-experts can get the general idea.
 - ▶ Should provide evidence of continued growth.
 - ▶ Should indicate interest in undergraduate research and potential ideas for students to get involved.

³partly borrowed from Dagan Karp, “Applying to Liberal Arts Colleges”

Other Parts of Your Application³

- ▶ Research Statement
 - ▶ Should be understandable enough that non-experts can get the general idea.
 - ▶ Should provide evidence of continued growth.
 - ▶ Should indicate interest in undergraduate research and potential ideas for students to get involved.
- ▶ Letters of Reference
 - ▶ Letters that only discuss your research promise are not very helpful.
 - ▶ Need to have at least one (preferably more) that directly address your teaching.

³partly borrowed from Dagan Karp, "Applying to Liberal Arts Colleges"

Interviews⁴

⁴partly borrowed from Dagan Karp, “Applying to Liberal Arts Colleges”

Interviews⁴

- ▶ Be able to describe your research to undergraduates. (Motivation is important!)

⁴partly borrowed from Dagan Karp, “Applying to Liberal Arts Colleges”

Interviews⁴

- ▶ Be able to describe your research to undergraduates. (Motivation is important!)
- ▶ Make your talk accessible to undergraduates.

⁴partly borrowed from Dagan Karp, “Applying to Liberal Arts Colleges”

Interviews⁴

- ▶ Be able to describe your research to undergraduates. (Motivation is important!)
- ▶ Make your talk accessible to undergraduates. (All of it!)

⁴partly borrowed from Dagan Karp, “Applying to Liberal Arts Colleges”

Interviews⁴

- ▶ Be able to describe your research to undergraduates. (Motivation is important!)
- ▶ Make your talk accessible to undergraduates. (All of it!)
- ▶ Do research about the school and the math program. Ask intelligent questions about them.

⁴partly borrowed from Dagan Karp, “Applying to Liberal Arts Colleges”

Interviews⁴

- ▶ Be able to describe your research to undergraduates. (Motivation is important!)
- ▶ Make your talk accessible to undergraduates. (All of it!)
- ▶ Do research about the school and the math program. Ask intelligent questions about them.
- ▶ Be prepared to teach a class.

⁴partly borrowed from Dagan Karp, “Applying to Liberal Arts Colleges”

Interviews⁴

- ▶ Be able to describe your research to undergraduates. (Motivation is important!)
- ▶ Make your talk accessible to undergraduates. (All of it!)
- ▶ Do research about the school and the math program. Ask intelligent questions about them.
- ▶ Be prepared to teach a class.
- ▶ Have answers to questions about long-term plans for your research program and potential new courses.

⁴partly borrowed from Dagan Karp, “Applying to Liberal Arts Colleges”